

MYSTERY SHARK OFF THE FLORIDA COAST
JOHN HAIRR

The Palm Beach waterfront was a hive of activity on a sunny spring day in late May of 1903. Tourists were admiring the usual spectacle of fishermen unloading their catch. But on this particular day there was something else which captured everyone's attention. A huge shark—over 18 feet long—was suspended above the dock, where visitors and natives alike tried to figure out the identity of the strange-looking monstrous shark.

Doubtless there have been many such episodes as this which have played out on the dock that were soon forgotten after the participants moved on or passed away. Fortunately, one of the witnesses at the dock in Palm Beach was a local government official from Chicago, Illinois, who later regaled his friends back home with stories of his adventures in Florida, including the story about this large shark. One of these friends happened to be a writer for the *Chicago Inter Ocean*, who was intrigued by the tale and decided to investigate the matter further. When he was finished, the anonymous writer had chronicled one of the most interesting sharks caught in Florida waters in the early years of the twentieth century.

The shark was caught off the southeast coast of Florida by a fisherman who, like other people involved with the incident, was not identified in the original account. We do know how he caught the fish. The shark was attracted to the bright reflection of something moving erratically along the surface of the ocean. Unfortunately for the shark, what at first might have looked like a shiny tuna or amberjack turned out to be a shiny metal can that

concealed a large steel hook which in turn was attached to a thick rope. When the hook was set firmly in the shark's mouth, the anonymous fisherman pulled the large shark to his boat, not with a traditional rod and reel, but with a heavy-duty windlass he had rigged for landing large sharks.

The shark put up quite a fight, but in the end it was unable to shake the hook from its mouth. The exhausted fish was secured to the boat, and towed back to Palm Beach where it was landed on the dock. Several people were on hand to watch the fisherman hoist the big fish ashore, including the aforementioned man from Chicago.

The huge shark was hung upside down there on the waterfront, where those present made a thorough examination of the monstrous shark. The writer from Chicago described the huge fish. "It was one of the biggest sharks ever caught in Florida waters and was evidently a sailor of many years. The animal measured eighteen feet long, and had a sword attachment that was as long as an arm and was of the leopard variety, stamping it as one of the man eating variety, a dangerous beast" (Anonymous, 1903).

The description of the shark leads to many questions. Perhaps the most problematic part of the description is the sword-like appendage. The chronicler gives too few details to explain exactly what was meant by "sword attachment." He notes that the sword was as long as a man's arm, so from that we can estimate that it was roughly three feet long.

But he does not mention where this appendage was attached. Most would assume that it was protruding forward from the shark's skull in the same fashion as a billfish such as a sailfish, marlin or swordfish. If we grant that the captain of the shark-fishing vessel was competent enough to distinguish the difference between sharks and billfish, then we can rule out the possibility that this was a swordfish or marlin that was misidentified. Later discussion of the examination of the contents of the animal's stomach will also argue against this fish being any type of billfish.

Another family of fish with an appendage extending forward from its head are the various species of the family Pristidae, the sawfish. Although these animals look much like a species of shark,

they are actually classified as a type of skate or ray, having gills on the underside of its body and eyes on top of the head. There are only two species of sawfish that have been caught in the waters off Florida: the smalltooth sawfish, *Pristis pectinata*, and the largetooth sawfish, *Pristis peroteti*. Very little is known about the life history of either the largetooth or smalltooth sawfish. Sawfish have a long flat rostrum protruding forward from the snout, on the side of which are several pairs of conical teeth.

Sawfish are reported to reach some rather large sizes. Allen (1996) noted a 46-footer caught 37 miles up the Chao Phya River in Thailand. The largest species known in Florida, the largetooth sawfish, are known to grow in excess of twenty feet long. Thus, the 18-foot recorded for the Palm Beach shark is well within the maximum size range for several species of sawsharks.

The most important aspect of sawfish behavior, at least as far as this study is concerned, is the way in which they kill and consume prey. These animals utilize their lethal blade by swinging it back and forth in the water, either slashing their prey into pieces or impaling the meat on their sharp teeth. Like other skates and rays, the mouth of a sawfish is located on the underside of its body. Thus, it mainly consumes food with a strong sucking action. Instead of biting large chunks of flesh from its victims, sawfish allow the smaller pieces to fall to the bottom, where they are consumed in the same fashion they would consume any bottom dwelling animals like shrimp and crustaceans (Allen, 1996).

The Palm Beach shark could have been one of the shark species that make up the Order Pristiophoriformes, or the sawsharks. The most distinguishing feature of the pristiophroids is the set of nasal barbells that hang down from the underside of their saw. They use these barbells, along with their ampullae of Lorenzini on the underside of their saw, to locate food on the bottom of the ocean. These sharks have a small mouth and small cuspidate teeth, and eat correspondingly small prey they find on the bottom of the ocean, including small fish and crustaceans.

Campagno, et al., (2005) identify nine species of sawsharks, most of which live in the waters of the Indian and Pacific oceans.

There is one species, the Bahamas sawshark, *Pristiophorus schroederi*, found in the waters off the southeast coast of North America. This species of sharks was first discovered in June of 1957 in 2,100 feet of water in the Santaren Channel near the Dog Rocks off the Cay Sal Banks by researchers from the U.S. Bureau of Commercial Fisheries. Less than a year later, two more specimens of this species were caught by researchers from the same organization in the waters of the Atlantic Ocean on the north side of Little Bahama Bank. Springer and Bullis (1960) wrote of the significance of the specimens, "These specimens are the only sawsharks known from the Western Hemisphere and are of unusual interest because they represent the Pristiophoridae, a poorly known family of great antiquity."

The Bahamas sawsharks are generally smaller and more slender than sawfish. The maximum length recorded for a Bahamas sawshark is a specimen measuring just under three feet caught in the Northwest Providence Channel in 1965. This is well under the 18 feet recorded for the mystery shark caught off Palm Beach.

There is one other shark species that possibly answers the description of the Palm Beach mystery shark—the goblin shark, *Mitsukurina owstoni*. This is one of the more unusual looking species of sharks that spends its life in the deepest part of the world's oceans. The most distinguishing feature of this species of shark is its flat blade-like snout, protrusive jaws, small eyes and pinkish hue to its skin. Many liken these animals to some sort of prehistoric shark.

In July of 2000, commercial deep-sea fishermen working in the Gulf of Mexico 120 miles south of Pascagoula, Mississippi, were reeling in a crabline and inadvertently hooked a large fish at a depth of 3,300 feet. When they got the fish to the surface, they discovered that they had hooked one of the largest and strangest looking creatures any of them had ever seen. They hoisted it out of the water so they could get a photograph of their unusual catch, saved the jaws and discarded the rest of the carcass without weighing or measuring the remains.

Eventually the fish came to the attention of Dr. Glenn Parson of the University of Mississippi. He and his colleagues studied the

photos and came to the conclusion that this was a goblin shark, the first of its kind reported from the Gulf of Mexico, and only the second reported from U.S. waters. "The goblin shark is arguably the rarest (and perhaps ugliest) shark in existence, with only a single specimen caught in the Gulf of Mexico," wrote Parsons (2006). He and his colleagues calculated that the shark caught in 2000 was between 17.7 and 20.2 feet long, making it the largest goblin shark on record.

Since they are infrequently caught and rarely studied, very little is known about goblin sharks, especially their eating habits. They are believed to consume items found in the deepest reaches of the ocean, especially squid. But whether or not they leave the depths to come to the surface of the ocean to hunt for food is unknown.

Which brings us back to the Palm Beach shark. When the fisherman and those assisting him cut open the large fish, they found several notable items. None of these would have been what one would expect to find in the belly of a sawshark or sawfish, and based on the little we know about the eating habits of goblin sharks, not likely one of them either. "It was the interior of the fish, however, that excited the greatest interest," continued the chronicler from Chicago. "When he was cut open, a whole porpoise was found in the stomach. There was also a large piece of partly digested shark and the head of an ostrich. The piece of shark inside the monster was out of the back and contained the backbone of the dead animal.

"A careful examination showed that the backbones were larger than the backbones of the captured shark. A number of scars on his body showed that he had been in conflict with another shark, and the finding of a piece of the adversary showed that the conflict had ended with the death of the opponent, and the victor had then swallowed a juicy portion of his adversary" (Anonymous, 1903).

The contents of the stomach clearly demonstrate that this was no bottom-feeding sawshark or sawfish, as there were no hacked up chunks of flesh or small crustaceans, but instead large items, including an entire porpoise swallowed whole. There are only two known species of sharks in Florida waters large enough to

consume the prey items found inside the Palm Beach shark—the tiger shark, *Galeocerdo cuvier*, and the great white shark, *Carcharodon carcharias*. Both are large species of sharks, and the 18-foot total length is within the maximum size range of both species.

Unfortunately, shark nomenclature will not help unravel the mystery. The shark was described as belonging to, “. . . the leopard variety, stamping it as one of the man eating variety, a dangerous beast.” First, we can rule out the present shark currently referred to as the leopard shark, *Triakis semifasciata*. These sharks are frequently seen in public aquaria because of their distinctive color pattern. However, they are not the same species of sharks as the one referred to in the 19th and early 20th centuries as leopard sharks in Florida. Not only are *Triakis semifasciata* too small, maxing out at approximately five feet total length, but these sharks are native to the Pacific Ocean, especially the coast around California and northern Mexico (Allen, 1996).

Shark nomenclature was a haphazard affair, especially at the turn of the 20th century. Press accounts used mainly localized names, and these were often different from town to town. Fishermen of that era usually had three main groupings for sharks—sandsharks, hammerheads and man-eaters. All the species we identify today as hammerheads would have been known as a hammerhead back then. The small varieties of sharks found close inshore such as the Atlantic sharpnose shark, *Rhizoprionodon terraenovae*, and the sandbar shark, *Carcharhinus plumbeus*, would have been known as sandsharks. Bulls, great whites, tigers and other large pelagic sharks would have been considered a man-eater. Even relatively harmless whale sharks, *Rhincodon typus*, and basking sharks, *Cetorhinus maximus*, were viewed as man-eaters and treated accordingly.

As time went by, other names were applied within the groupings. In the case of the leopard shark, the name was applied to white sharks, especially in South Florida. But the name was also applied to tiger sharks. This latter designation is easy enough to understand, since young tiger sharks often have stripes and mottling that fades as the shark gets older.

With the use in the local vernacular of the names for both species interchangeably as man-eaters and leopard sharks, it is impossible to distinguish between the two based solely on the name given the shark in the account.

What the people at Palm Beach found especially interesting about the contents of the stomach of the shark was the presence of the remains of a bird's head which they identified as an ostrich, *Struthio camelus*, a bird which is native to Africa. Unfortunately we have no drawings or images of the bird's head. Those who were there and saw it were convinced that it was indeed an ostrich, and this lead them to hypothesize on where the shark had been before making its trip to Florida.

"The presence of the ostrich head in the stomach of the man eater was regarded as undoubted proof that the shark had probably just arrived in Florida waters from Africa, and that he had made the trip in two or three days. The head was not digested, and the process of digestion had only just begun. There is only one ostrich farm in Florida, and when that institution was communicated with the owner said that they had not lost an ostrich in a year" (Anonymous, 1903).

Tiger sharks are known to travel great distances. In fact, researchers engaged in various shark tagging studies found proof that tiger sharks cross the Atlantic Ocean when a tiger shark caught and tagged off St. Augustine was recaptured several months later off the African coast near Bolama, which is a small island off the Arquipelago dos Bijagos off Guine-Bissau (Bright, 2000). But tiger sharks are slow swimmers, and would take several months, not three days, to cross the Atlantic.

Like other lamnids, great whites are among the fastest sharks in the ocean. They cruise around at a modest two miles per hour, but when attacking, can reach speeds in excess of twenty miles per hour (Ellis and McCosker, 1991). Even at top speed, a white shark would take several days to make the 4,000-mile passage from Africa to Florida. We know that white sharks thrive off the African coast, especially South Africa where tourists flock to observe these large fish.

Studies (Bonfil, et al., 2005) have shown that white sharks are capable of covering the distance required for making the transatlantic trip. In November of 2003, a white shark identified as P12 was tagged off the coast of South Africa and traveled all the way across the Indian Ocean to the coast of Western Australia, then returned to South Africa. Ramon Bonfil and his colleagues (Bonfil, et al, 2005) noted of this shark, "Shark P12 traveled at minimum speed of 4.7 km hour⁻¹ during its migration to Australia, which is the fastest sustained long-distance speed known among sharks and comparable to that of the fastest swimming tunas."

Even though no one has yet studied similar migratory behavior in white sharks in the Atlantic, it is only a matter of time before a shark tagged off the coast of Morocco, Liberia, Senegal or some other West African country will make its way to the waters off North America. When they do, they will be shown to travel at speeds comparable to those observed at other locales around the world, and not in the three days estimated by those who examined the shark off Palm Beach.

Based on the migratory patterns and swimming speed of large migratory sharks caught off Florida, it is doubtful that the undigested bird's head found inside the shark caught off Palm Beach was really an ostrich. The more likely explanation is the remains were from some type of large sea bird caught in the local area.

As for the identity of the Palm Beach shark, based on the items found inside the shark's stomach, we can rule out billfish, sawfish, sawsharks, whale sharks, and basking sharks. Only two species of large sharks found off the Florida coast answer the description of the shark and its prey: the great white shark and the tiger shark, but neither of these species have an appendage extending from their head that answers to the sword described by the writer from Chicago. A third species of large shark, the goblin shark, is the only species of shark that reaches the size of the shark in question, and has a bladelike appendage extending from its head. Unfortunately, we know too little about the life history of the goblin shark to know whether it consumes the prey items found inside the Palm Beach shark. If the sword was indeed an appendage

protruding from the shark's head, then it is quite possible that this 18-foot fish was a goblin shark. If not, then this mystery shark was some other heretofore unrecorded species of shark unlike any other ever seen in Florida waters.

BIBLIOGRAPHY

- Allen, Thomas B. 1996. *Shadows in the Sea*. Guilford, CT: The Lyons Press.
- Anonymous. 1903. A Shark's Quick Trip. *Peninsula Enterprise*, (Accomac Court House, VA) June 27. [Article is a reprint of the original article published at an unspecified date in the *Chicago Inter Ocean*.]
- Bonfil, R., Meyer, M., School, M., Johnson, R. O'Brien, S. Oosthuizen, H., Swanson, S., Kotze, D., and M. Patterson. 2005. Transoceanic migration, spatial dynamics, and population linkages of white sharks. *Science* 310 (7 October): 100-103.
- Bright, Michael. 2000. *The Private Life of Sharks*. Mechanicsburg, PA: Stackpole Books.
- Compagno, Leonard, Dando, Marc, and Sarah Fowler. 2005. *Sharks of the World*. Princeton and Oxford: Princeton University Press.
- Ellis, R., and J.E. McCosker. 1991. *Great White Shark*. Stanford, CA: Stanford University Press.
- Parsons, Glenn. 2006. *Sharks, Skates and Rays of the Gulf of Mexico*. Jackson, MS: University Press of Mississippi.
- Springer, Stewart, and Harvey R. Bullis, Jr. 1960. A new species of sawshark, *Pristiophorus schroederi*, from the Bahamas. *Bulletin of Marine Science of the Gulf and Caribbean*. 10(2): 241-254.